IN THE SPECIFICATION

Pursuant to 37 CFR § 1.121(b)(1)(i)-(ii), please delete the paragraph beginning on page 1, line 7 and continuing through line 10, and replace it with the following paragraph, which includes markings to show all the changes relative to the previous version of the paragraph:

"This application is also related to copending application ~~xx/yyy,yyy~~ 10/040,532, filed January 7, 2002, titled **EXTENDING AN INTERNET CONTENT DELIVERY NETWORK INTO AN ENTERPRISE ENVIRONMENT BY LOCATING ICDN CONTENT SERVERS TOPOLOGICALLY NEAR AN ENTERPRISE FIREWALL."**

Pursuant to 37 CFR § 1.121(b)(1)(i)-(ii), please delete the paragraph beginning on page 2, line 7 and continuing through line 29, and replace it with the following paragraph, which includes markings to show all the changes relative to the previous version of the paragraph:

"Enterprises have begun to explore the desirability of implementing content delivery infrastructures to address several problems. Currently, enterprise users typically experience slow and expensive access to Internet content. Slow access to business critical data available on the Internet hurts productivity, and the cost of providing good access, e.g., by building bigger networks and by deploying and managing caching infrastructure, is large. In addition, many IT organizations cannot deliver the required quality of service for Internet content delivery due to lack of talent and expertise. Yet another reason corporations are exploring CDNs is because of the slow, expensive and often cumbersome access to and within the entity's intranet. As corporate intranets quickly become a critical component of business ~~process~~ processes in many large companies, fast and efficient access to the data and applications on the intranet is a high priority for many IT departments. Nevertheless, current intranet delivery solutions are inadequate, and solving the problems, e.g., by building bigger internal networks, deploying and managing caches, and distributing application front ends, is extremly expensive. To address these deficiencies, several large software vendors are attempting to build ecosystems to provide web-based front ends to many enterprise applications, however, distributing these ~~application~~ applications from front ends efficiently, in of itself, will be a critical IT problem that current technologies do not addresss. Finally, enterprises are considering CDN technology due to slow, expensive access to business partner applications and information provided by current techniques and solutions. Business-to-business applications (such as ordering, inventory, and pricing

management) ~~between business partners is done today~~ typically are implemented by linking partners with a physical network. These applications are moving to the Internet/intranet, and the need to link business partners together in an efficient way with web-based front ends is another critical IT problem that is not addressed by today's solutions."

Pursuant to 37 CFR § 1.121(b)(1)(i)-(ii), please delete the paragraph beginning on page 3, line 2 and continuing through line 11, and replace it with the following paragraph, which includes markings to show all the changes relative to the previous version of the paragraph:

"According to the present invention, an Internet content delivery network is extended into an enterprise to create a flexible, uniform platform that preferably is deployed both on the Internet and inside of corporations (or other business entities). Preferably, the same software and systems are deployed on the Internet CDN and inside the enterprise. By having only one technology that encompasses both the Internet and the corporate network (LAN, WAN, or the like), the resulting platform can be leveraged to provide new business services to the enterprise in a more efficient and cost-effective manner. Managing the same infrastructure is quite efficient, and by deploying the same software and systems on the ICDN and inside the enterprise, the ICDN can seamlessly ~~delivery~~ deliver Internet content in the enterprise and, with suitable security, it can deliver intranet content over the Internet."

Pursuant to 37 CFR § 1.121(b)(1)(i)-(ii), please delete the paragraph beginning on page 7, line 7 and continuing through line 9, and replace it with the following paragraph, which includes markings to show all the changes relative to the previous version of the paragraph:

"As described above, it is known in the art to ~~delivery~~ deliver HTTP, streaming media and applications over an Internet content delivery network (CDN or ICDN). The present invention leverages Internet CDN architecture and functionality such as generally described below."

Pursuant to 37 CFR § 1.121(b)(1)(i)-(ii), please delete the paragraph beginning on page 7, line 7 and continuing through page 8, line 26, and replace it with the following paragraph, which includes markings to show all the changes relative to the previous version of the paragraph:

"As seen in Figure 1, an Internet content delivery infrastructure usually comprises a set of "surrogate" origin servers 102 that are located at strategic locations (e.g., Internet network access

points, and the like) for delivering copies of content to requesting end users 119. A surrogate origin server is defined, for example, in IETF Internet Draft titled "Requirements for Surrogates in the HTTP" dated August 9, 2000, available at http://www.mnot.net/papers/draft-nottingham-surrogates-01.txt, which is incorporated herein by reference. The request-routing mechanism 104 allocates servers 102 in the content delivery infrastructure to requesting clients in a way that, for web content delivery, minimizes a given client's response time and, for streaming media delivery, provides for the highest quality. The distribution infrastructure consists of on-demand or push-based mechanisms that move content from the origin server to the surrogates. A CDN service provider (CDNSP) may organize sets of surrogate origin servers as a "region." In this type of arrangement, a CDN region 106 typically comprises a set of one or more content servers that share a common backend, e.g., a LAN, and that are located at or near an Internet access point. Thus, for example, a typical CDN region may be co-located within an Internet Service Provider (ISP) Point of Presence (PoP) 108. A representative CDN content server is a Pentium-based caching appliance running an operating system (e.g., Linux, Windows NT, Windows 2000) and having suitable RAM and disk storage for CDN applications and content delivery network content (e.g., HTTP content, streaming media and applications). Such content servers are sometimes referred to as "edge" servers as they are located at or near the so-called outer reach or "edges" of the Internet. The CDN typically also includes network agents 109 that monitor the network as well as the server loads. These network agents are typically co-located at third party data centers or other locations. Map maker software 107 receives data generated from the network agents and periodically creates maps that dynamically associate IP addresses (e.g., the IP addresses of client-side local name servers) with the CDN regions. In one type of service offering, known as Akamai FreeFlow, from Akamai Technologies, Inc. of Cambridge, Massachusetts, content is tagged for delivery from the CDN using a content migrator or rewrite tool 106 operated, for example, at a participating content provider server. Tool 106 rewrites embedded object URLs to point to the CDNSP domain. A request for tagged content is resolved through a CDNSP-managed DNS to identify a "best" region, and then to identify an edge server within the region that is not overloaded and that is likely to host the requested content. Instead of using content provider-side migration (e.g., using the tool 106), a participating content provider may simply direct the CDNSP to serve an entire domain (or subdomain) by a DNS

directive (e.g., a CNAME). In such case, the CDNSP may provide object-specific metadata to the CDN content servers to determine how the CDN content servers will handle a request for an object being served by the CDN. Metadata, as used herein, thus refers to the set of all control options and parameters for the object (e.g., coherence information, origin server identity information, load balancing information, customer code, other control codes, etc.), and such information may be provided to the CDN content servers via a configuration file, in HTTP headers, or in other ways. A configuration file is advantageous as it enables a change in the metadata to apply to an entire domain, to any set of directories, or to any set of file extensions. In one approach, the CDNSP operates a metadata transmission system 116 comprising a set of one or more servers to enable metadata to be provided to the CDNSP content servers. The system 116 may comprise at least one control server 118, and one or more staging servers 120a-n, each of which is typically an HTTP server (e.g., Apache). Metadata is provided to the control server 118 by the CDNSP or the content provider (e.g., using a secure extranet application) and periodically delivered to the staging servers 120a-n. The staging servers deliver the metadata to the CDN content servers as necessary."

Pursuant to 37 CFR § 1.121(b)(1)(i)-(ii), please delete the paragraph beginning on page 9, line 6 and continuing through line 26, and replace it with the following paragraph, which includes markings to show all the changes relative to the previous version of the paragraph:

"According to the invention, servers that handle internal enterprise content (i.e., non publicly-available content) are deployed within or outside an enterprise firewall and are also used as surrogate origin servers for hosting and ~~server~~ serving ICDN content. A particular CDN server deployed and managed in this manner may be used to serve (a) enterprise content (in which case it is referred to as an ECDN server with respect to such content) and/or (b) ICDN content (in which case it is referred to an an ICDN server with respect to such content) of behalf of CDN content providers. In a first general embodiment, the CDNSP locates its content server region (comprising one or more content servers, where multiple servers may share a common backend) inside an enterprise's firewall. Thus, for example, the CDN content servers are located on the corporate LAN, perhaps even side-by-side with other servers in the enterprise infrastructure. When such servers are located inside the enterprise firewall, they are ECDN

servers but are also deemed to be "ICDN-aware" because, according to the invention, they can be used as surrogate origin servers to serve ICDN content. Thus, in this embodiment, the CDN servers are used to deliver both Internet content otherwise available from the ICDN as well as intranet content that is tagged or otherwise made available for delivery over those servers. In a second general embodiment, the CDNSP locates its content server region topologically (and perhaps geographically) near where the enterprise connects to the Internet but not within the enterprise firewall itself. Thus, for example, CDN content servers are located in the demilitarized zone (DMZ) just outside the corporate firewall or at a nearby (topologically-speaking) network access point. With appropriate authentication and access control in place, these ICDN servers can be used to serve intranet content. As such, these ICDN servers are also "ECDN-aware." "

Pursuant to 37 CFR § 1.121(b)(1)(i)-(ii), please delete the paragraph beginning on page 10, line 63 and continuing through line 9, and replace it with the following paragraph, which includes markings to show all the changes relative to the previous version of the paragraph:

"An enterprise may include one or more locations such as a ~~control~~ central office and one or more remote offices. Conventionally, a remote office is connected to the central office over a private line, which refers to a line not generally routable over the public Internet (e.g., frame relay, satellite link, microwave link, or the like), over a virtual private network (VPN) typically over the public Internet, or in other known ways. In the present invention, the CDNSP extends its ICDN into the enterprise by deploying and managing CDN server regions in the central office and/or regional offices of the enterprise."